

## CLAIMS

1. An all-fiber broadband polarization combiner which has a Mach-Zehnder (MZ) structure having an entry coupler and an exit coupler interconnected with two standard (SM) fibers which form two arms of central zone of the MZ, said entry coupler  
5 having two input arms also made of SM fibers to which are spliced polarization maintaining (PM) fibers oriented so that polarization X in one PM fiber is orthogonal to polarization Y in the other PM fiber, and said exit coupler having two output arms also made of SM fibers, which constitute the exit arms of the broadband polarization combiner, said entry coupler being a polarization pump combiner (PPC) and said exit  
10 coupler being a wavelength division multiplexer (WDM) coupler which has essentially the same spectral spacing and is centered to essentially the same wavelength as the PPC, and a phase shift  $\Delta\phi$  of  $\pi$  being induced between the two arms of the central zone.
2. A broadband polarization combiner according to claim 1, in which the phase shift  $\Delta\phi$  of  $\pi$  is induced between the two arms of the central zone of the MZ by subjecting  
15 one of the arms of the central zone to UV radiation.
3. A broadband polarization combiner according to claim 1, in which the phase shift  $\Delta\phi$  of  $\pi$  is induced between the two arms of the central zone of the MZ by subjecting one of the arms of the central zone to mechanical stress.